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WHITNEY, Peter, S. [US/US]; 39 Shade Street, Lexington, MA 02421 (US). **MILLER, Michael, F.** [US/US]; 73 Wheeler Road, Hollis, NH 03049 (US).

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(74) Agent: **HOUSTON, J., Grant:** Axsun Technologies, Inc., 1 Fortune Drive, Billerica, MA 01821 (US).

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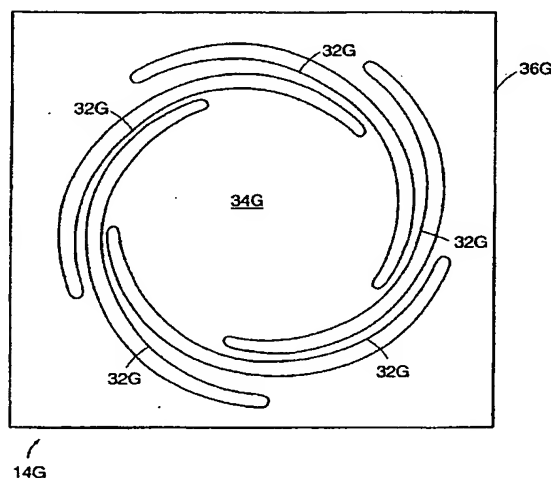
(71) Applicant (*for all designated States except US*): **AXSUN TECHNOLOGIES, INC.** [US/US]; 1 Fortune Drive, Billerica, MA 01821 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **FLANDERS, Dale,** Published:
C. [US/US]; 15 Preston Road, Lexington, MA 02420 (US). — *with international search report*

[Continued on next page]

(54) Title: **FLEXIBLE MEMBRANE FOR TUNABLE FABRY-PEROT FILTER**



(57) Abstract: A tunable Fabry-Perot filter includes an optical cavity bounded by a stationary reflector and a deformable or movable membrane reflector. A second electrostatic cavity outside of the optical cavity includes a pair of electrodes, one of which is mechanically coupled to the movable membrane reflector. Voltage applied to the electrodes across the electrostatic cavity causes deflection of the membrane, thereby changing the length of the optical cavity and tuning the filter. The filter with the movable membrane can be formed by micro device photolithographic and fabrication processes from a semiconductor material in an integrated device structure. The membrane can include an inner movable membrane portion connected within an outer body portion by a pattern of tethers. The pattern can be such that straight or radial tethers connect the inner membrane with the outer body. Alternatively, a tether pattern with tethers arranged in a substantially spiral pattern can be used.

WO 01/67171 A3

WO 01/67171 A3



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G02B26/00 G02B7/188 G02B26/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 52006 A (ETALON INC ;MILES MARK W (US)) 14 October 1999 (1999-10-14) page 9, line 27 - line 35 page 10 page 11, line 1 - line 11 figures 1A-1D	1,2,6,7, 10,11, 15,16
X	ARATANI K ET AL: "SURFACE MICROMACHINED TUNEABLE INTERFEROMETER ARRAY" SENSORS AND ACTUATORS A, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. A43, no. 1/3, 1 May 1994 (1994-05-01), pages 17-23, XP000454081 ISSN: 0924-4247 figures 8,11,12	1-5,7, 10-16

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Ward, S

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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INTERNATIONAL SEARCH REPORT

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